

# Mass in action



Convert between grams and kilograms using decimals to 3 places

**Challenge**

1 Write each mass using decimal notation.

- a i  $\frac{3}{10}$  kg      ii  $\frac{3}{100}$  kg      iii  $\frac{3}{1000}$  kg  
 b i  $\frac{7}{10}$  kg      ii  $\frac{7}{100}$  kg      iii  $\frac{7}{1000}$  kg

2 Convert each mass to kilograms using decimal notation.

- a i 400 g      ii 40 g      iii 4 g  
 b i 900 g      ii 90 g      iii 9 g  
 c i 1200 g      ii 120 g      iii 12 g

3 Convert each mass to grams.

- a i 0.8 kg      ii 0.08 kg      iii 0.008 kg  
 b i 4.5 kg      ii 4.05 kg      iii 4.005 kg

**Challenge**

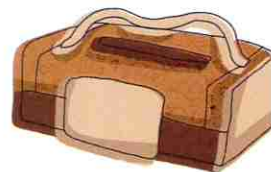
2 1 Convert the mass of each sports bag to kilograms then round your answer to one decimal place.



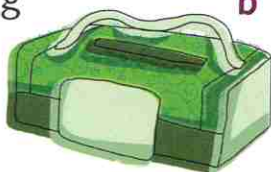
a 6818 g



b 9090 g



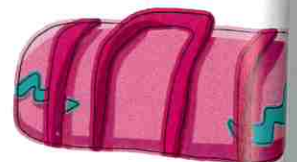
c 7366 g



d 14 275 g



e 12 050 g



f 10 025 g

**Example**

$$\frac{1}{10} \text{ kg} = 0.1 \text{ kg}$$

$$\frac{1}{100} \text{ kg} = 0.01 \text{ kg}$$

$$\frac{1}{1000} \text{ kg} = 0.001 \text{ kg}$$

**Example**

$$100 \text{ g} = 0.1 \text{ kg}$$

$$10 \text{ g} = 0.01 \text{ kg}$$

$$1 \text{ g} = 0.001 \text{ kg}$$

**Example**

$$1.03 \text{ kg} = 1030 \text{ g}$$

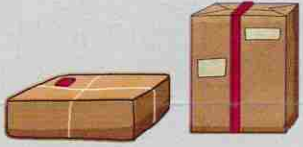
**Example**

$$4545 \text{ g} = 4.545 \text{ kg}$$

$$= 4.5 \text{ kg}$$

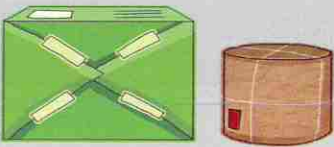
2 Calculate the total mass of each pair of parcels in kilograms then convert your answer to grams.

**a**




3.4 kg    4.56 kg

**b**



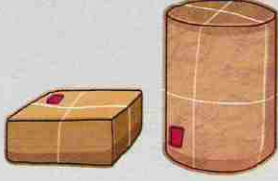
6.17 kg    5.8 kg

**c**



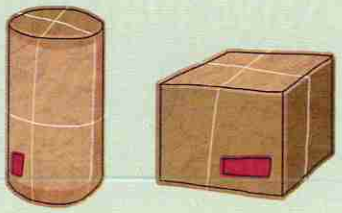
7.52 kg    9.375 kg

**d**



4.27 kg    8.135 kg

**Example**

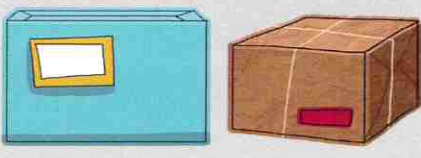


3.15 kg    4.356 kg

$$3.15 + 4.356 = 7.506 \text{ kg}$$

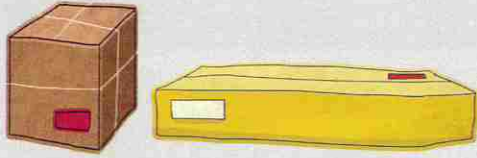
$$7.506 \text{ kg} = 7506 \text{ g}$$

**e**



8.245 kg    4.606 kg

**f**



10.875 kg    9.125 kg

Every UK coin of the same value has exactly the same mass when it is put into circulation by the Royal Mint.



£2 coin:  
12 g



£1 coin:  
9.5 g



50p coin:  
8 g



20p coin:  
5 g



10p coin:  
6.5 g



5p coin:  
3.25 g



2p coin:  
7.12 g



1p coin:  
3.56 g

1 Find in grams and then in kilograms the total mass of 100 coins of each denomination of coin.

2 Calculate the total value of:

**a** 1 kg of 20p coins

**b** 0.96 kg of £2 coins

**c** 0.65 kg of 5p coins

**d** 0.48 kg of 50p coins

